

REMARKS

By the above Amendments, the Abstract and claim 1 have been amended. Claims 4-26 have been canceled without prejudice or disclaimer of the subject matter thereof. New dependent claims 27-33 have been added. After entry of this Amendment, claims 1-3 and 27-33 are pending in the application.

Cancellation of claims 4-26 alleviates the Examiner's objections listed on page 2 to the end of page 3 of the Office Action regarding claims 4, 8, 12-14, 16, 18, and 19.

Applicants note that the present invention is directed to a method of inspection of defects on a wafer, illustrated schematically in FIG. 28, which includes: a step of assigning an inspection recipe, a step of inspecting a sample using the inspection recipe assigned, and a step of outputting results of the inspection. The step of assigning the inspection recipe further includes an image signal acquisition step in which images of a sample are each sequentially acquired under a plurality of sets of image acquisition conditions differing from each other. A plurality of image signals each different in image acquisition conditions are sequentially acquired. The step of inspecting the sample further includes: a displaying step for displaying the plurality of sequentially acquired image signals together with information of the image acquisition conditions and indexes which indicate appropriateness of the image signals for detecting defects; an image acquisition conditions determining step for determining the image acquisition condition based upon the displayed images and the displayed indexes; an image processing step for processing the images acquired under the determined image acquisition conditions by varying defect detection conditions; a defect detection conditions determination step for determining

the defect detection conditions by using information from images processed at the image processing step; and a defect detection step in which, from each of the plurality of image signals sequentially acquired under different sets of image acquisition conditions in the image signal acquisition step, defect candidates are detected for each of the plurality of sets of image acquisition conditions, and position information of the defect candidates detected is acquired.

Applicants note that in accordance with the present invention indexes are which quantitatively indicate appropriateness of the image signals for detecting defects. The indexes incorporate at least one of statistical properties derived from image statistics. The statistical properties include image contrast, differential value, grey scale level, grey scale distribution parameters and standard deviation.

The support for the amended amendments of claim 1 and for newly presented claims can be found in FIGs. 20-28 and related parts of the specification starting at page 48, second paragraph to page 57, last paragraph. For example, the support for the indexes recited in newly presented claims 27 and 28 can be found at page 51, second paragraph and FIGs. 24 and 27.

Claims 1, 2, 4-6, 9, 10, 14, 15, 20 and 22-26 stand rejected under 35 U.S.C. §102(b) as being anticipated by USPub. 2002/0048761 to Hamamatsu et al. ("Hamamatsu"). This rejection is traversed insofar as it is applicable to the present claims, and reconsideration and withdrawal of the rejection is respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. §102, reference is made to the decision In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not

expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

Turning to the rejection of claim 1, under 35 U.S.C. §102(b) over Hamamatsu, applicants submit that Hamamatsu failed to disclose a method of inspecting defects including, *inter alia*, "a displaying step for displaying the plurality of sequentially acquired image signals together with information of the image acquisition conditions and indexes which indicate appropriateness of the image signals for detecting defects; an image acquisition condition determination step for determining the image acquisition condition based upon the displayed images and the displayed indexes," (emphasis added) as recited in claim 1. Hamamatsu does not disclose any quantitative measure, and, in particular, indexes which indicate appropriateness of the image signals for detecting defects. Consequently, Hamamatsu does not disclose use of indexes or any corresponding quantitative measure for determination of the image acquisition conditions, as recited in claim 1. Thus, applicants submit that claim 1 recites features which patentably distinguish over Hamamatsu in the sense of 35 USC 102, and claim 1 and the dependent claims should be considered allowable thereover.

Regarding the dependent claims which depend from claim 1, applicants submit that the dependant claims include aforementioned patentably distinguishing

features of claim 1 by the virtue of dependency. Regarding new claims 27-33, applicants submit that new claims, in addition to the above discussed features of claim 1, include recitations of further features. For example, claim 27 recites "indexes which indicate appropriateness of the image signals for detecting defects incorporate at least one of statistical properties derived from image statistics," while claim 28 recites "said indexes which indicate appropriateness of the image signals for detecting defects incorporate at least one of an image contrast, a differential value, a grey scale level, and a standard deviation." (Emphasis added). Accordingly, Applicants submit that all dependent claims patentably distinguish over Hamamatsu in the sense of 35 USC 102 or 35 USC 103 and all claims should be considered allowable thereover. .

In view of the above Amendments and Remarks, applicants submit that all pending claims presented in this application should now be in condition for allowance and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.43707X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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